

Attorney's Docket No.: 10559-839001/P16714

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Previously Presented): A method comprising:
generating alignment light to align a wafer with an imaging plate of an optical system;

modifying the alignment light using an alignment grating on the imaging plate, the alignment grating having a first pitch, wherein said modifying the alignment light using an alignment grating comprises reflecting light from the alignment grating;
and

further modifying the alignment light at a pupil plane of the optical system to have an intensity periodicity of less than the first pitch at a wafer plane.

2. (Original): The method of claim 1, wherein the intensity periodicity of the alignment light at the wafer plane is equal to half the first pitch.

3-4. (Canceled).

5. (Original): The method of claim 1, further comprising:

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reflecting a reflected portion of the alignment light from an alignment pattern on a wafer at the wafer plane, the alignment pattern having a second pitch less than the first pitch.

6. (Original): The method of claim 5, wherein the second pitch is half the first pitch.

7. (Original): The method of claim 5, further comprising: receiving at least a portion of the reflected portion of the light in a detector; and determining an alignment characteristic based on the receiving.

8. (Original): The method of claim 7, further comprising changing the position of the wafer based on the alignment characteristic.

9. (Original): The method of claim 7, further comprising determining an alignment position based on the alignment characteristic.

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10. (Original): The method of claim 9, wherein changing the position of the wafer based on the alignment characteristic comprises positioning the wafer at the alignment position.

11. (Original): The method of claim 1, wherein further modifying the alignment light at the pupil plane comprises:

blocking a central maximum of the alignment light at the pupil plane; and

allowing unblocked light including a first order maximum of the alignment light to pass at the pupil plane.

12. (Canceled).

13. (Currently Amended): The method of claim 1[[2]], further comprising:

generating patterning light to pattern one or more devices on the wafer;

modifying the patterning light using a device pattern on the imaging plate; and

exposing a portion of a resist layer on the wafer using the patterning light.

14-46. (Canceled)

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47. (New) : An apparatus comprising:

means for generating alignment light to align a wafer with an imaging plate of an optical system;

means for modifying the alignment light using an alignment grating on the imaging plate comprising means for reflecting light from the alignment grating, the alignment grating having a first pitch; and

means for further modifying the alignment light at a pupil plane of the optical system to have an intensity periodicity of less than the first pitch at a wafer plane.

48. (New) : The apparatus of claim 47, wherein the intensity periodicity of the alignment light at the wafer plane is equal to half the first pitch.

49. (New) : The apparatus of claim 47, further comprising:

means for reflecting a reflected portion of the alignment light from an alignment pattern on a wafer at the wafer plane, the alignment pattern having a second pitch less than the first pitch.

50. (New) : The apparatus of claim 49, wherein the second pitch is half the first pitch.

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51. (New) : The method of claim 49, further comprising:
means for receiving at least a portion of the reflected
portion of the light in a detector; and
means for determining an alignment characteristic based on
the receiving.

52. (New) : The apparatus of claim 51, further comprising
means for changing the position of the wafer based on the
alignment characteristic.

53. (New) : The apparatus of claim 51, further comprising
means for determining an alignment position based on the
alignment characteristic.

54. (New) : The apparatus of claim 52, wherein said means
for changing the position of the wafer based on the alignment
characteristic comprises means for positioning the wafer at
the alignment position.

55. (New) : The apparatus of claim 47, wherein said means
for further modifying the alignment light at the pupil plane
comprises:

means for blocking a central maximum of the alignment light
at the pupil plane; and

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means for allowing unblocked light including a first order maximum of the alignment light to pass at the pupil plane.

56. (New): The apparatus of claim 47, further comprising:
means for generating patterning light to pattern one or more devices on the wafer;
means for modifying the patterning light using a device pattern on the imaging plate; and
means for exposing a portion of a resist layer on the wafer using the patterning light.